

CLAIMS

1. Apparatus comprising a bending wave panel loudspeaker having a bending wave panel defining a surface and an electro-acoustic transducer attached to the bending wave panel to excite bending waves in the panel to produce an acoustic output, an input device forming part of the surface and means for providing force feedback to the input device.

2. Apparatus according to claim 1, wherein the means for providing force feedback is in the form of a second transducer mounted to the panel which provides pulses to the panel. 77

3. Apparatus according to claim 1, wherein the transducer generates both acoustic output and force feedback, the force feedback being in the form of pulses to the panel.

4. Apparatus according to claim 2 or claim 3, wherein the pulses are in the form of a transient spike signal whereby a button click sensation is provided.

5. Apparatus according to claim 1, wherein the means for providing force feedback is in the form of non-linearly deflecting panel mounts by which the panel is mounted to the apparatus, the mounts producing a sensation of a button click when a portion of the panel is pressed.

6. Apparatus according to any one of claims 1, 2, 3 and 5, wherein regions of the input device are locally heated to provide tactile feedback.

7. Apparatus according to claim 1, comprising a visual display device associated with the bending wave panel.

8. Apparatus according to claim 7, wherein at least a part of the panel is transparent and the visual display device is

mounted behind the transparent part of the panel.

9. Apparatus according to claim 7, wherein the panel comprises an integral visual display device.

10. Apparatus according to any one of claims 1, 2, 3, 5 and 7, wherein the panel also functions as a microphone.

11. Apparatus according to any one of claims 1, 2, 3, 5 and 7, comprising a ~~still~~ or video camera located behind the panel.

12. Apparatus according to claim 1, wherein the panel comprises chromatic characteristics.

13. Apparatus according to claim 1, wherein the acoustic output of the loudspeaker is adjustable via the input device.

14. Apparatus according to claim 7, wherein the input device is a touch-sensitive input device.

15. Apparatus according to claim 1 or claim 7 in the form of a multi-channel player, wherein the panel has a plurality of loudspeaker regions for producing multi-channel sound.

16. Apparatus according to claim 15, comprising a keyboard on the panel surface.